

## Archaean enriched mantle reservoir beneath east Indian Shield

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Prograde hornblende-bearing mafic granulite xenoliths, associated with massif-type charnockite, is a significant feature of the collisional Eastern Ghats orogen (Kar, 2003). These mafic xenoliths have geochemical signature of arc-derived basalts (Fig.1). No correlation in Sr-Nd isotopic compositions is observed and hence mixing of different mantle components can not be envisaged. But present day low  $^{143}\text{Nd}/^{144}\text{Nd}$  values and high  $^{87}\text{Sr}/^{86}\text{Sr}$  values indicate an enriched mantle reservoir as the source of these mafic xenoliths (Fig.2). The 1.8 Ga Rb-Sr isochron represents the isotopic homogenization during granulite event in a collisional setting. Nd-model dates, calculated after Milisenda et al., 1994, *ca* 2.7 Ga (2688 to 2784 Ma), represents the time of extraction from the mantle. Also the enriched mantle reservoir in this segment of the east Indian Shield might have resulted from a previous crust-mantle interaction or crustal recycling (Shan Gao, 2004), during *ca* 3.0 Ga granulite event in the Eastern Ghats belt (Bhattacharya, 2001).

Kar et al., (2003), *Contrib. Mineral. Petrol.*, **145**, 707-729.

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Bhattacharya et al., (2001). *Geol. Mag.*, **138**, 609-618.

